REMARKS

Upon entry of the present response, claims 1, 2, 4-5, 7-10, 14, 19, 20, 28 and 29 are pending in the application. Claims 1, 2, 4, 14, 28 and 29 have been amended. Claims 1 and 2 are amended as suggested by the Examiner to more specifically clarify the subject matter of the claims. As requested by the Examiner, claims 4 and 28 are amended to add wash conditions for hybridization under stringent conditions, which is supported, *e.g.*, at least in the specification at page 17, line 16, through page 18, line 12. Both claims 14 and 29 have been amended to clarify that the coding strand is the strand used to express the polypeptide having the amino acid sequence provided in SEQ ID NO:2. Claim 21 was previously withdrawn from consideration as being directed to a non-elected invention and is hereby canceled. No new matter has been added.

The Office Action.

The outstanding rejections made by the Examiner in the June 2, 2003, Office Action were the following:

(1) Claims 1-2, 4-5, 7-10, 14, 19-20, 28 and 29 were rejected under 35 U.S.C. §101 as not supported by a specific, substantial and credible utility, and under 35 U.S.C. §112, first paragraph, for failing to teach how to use an invention without proper utility;

(2) Claims 14 and 29 were rejected under 35 U.S.C. §112, first paragraph, for lack of written description;

(3) Claims 1, 3-4, 19-21, and 28 were rejected under 35 U.S.C. §112, second paragraph, for being indefinite; and

Applicants further clarify in this Response the Patent Office standards that govern these utility rejections (as provided under 35 U.S.C. § 101 and 35 U.S.C. § 112, first paragraph), which Applicants have more than satisfied. A discussion of the patentability of the claims presented is provided below.

35 U.S.C. § 101 Utility Rejection Is Overcome Both On Its Own, And In Combination With The 35 U.S.C. § 112, First Paragraph, Rejection.

Claims 1-2, 4-5, 7-10, 14, 19-20, 28-29 remain rejected by this Examiner as lacking utility and as being non-enabled. The reason stated is that what is described has no apparent or disclosed specific and substantial credible utility.

Specifically, the Examiner contends that the specification as originally filed did not indicate that the claimed invention should or could be used "especially" for the growth of cells of the GI tract. See Office Action, p. 3, section 7. The Examiner further contends that where the specification lists numerous uses that are not linked by tissue type or mechanism of action, the skilled artisan would need to carry out further research on the claimed invention to determine which of the possible asserted uses the claimed invention could be used for, thereby failing to constitute disclosure of a substantial utility. Id, pp. 4-5. The rejections are reiterated that, even though multiple utilities are recited in the specification, there is no "specific" utility recited. Further, Examiner has dismissed outright as non-persuasive the Jeffers *et al.* reference, the Press Release, and all structural arguments submitted by the Applicant in the last Response to further document the substantial, credible and specific utilities disclosed in the application as filed. Id, p. 5. Each issue is addressed below.

First, the Examiner never refutes that FGF-CX is a growth factor. The Examiner admits that Applicants specifically include a recitation that the claimed invention may stimulate cells of the gastrointestinal tract." See, Id, p. 4. Applicants quote the following sections of the disclosure:

> "The proteins of the invention may be used to stimulate cell growth and cell proliferation in conditions in which such growth would be favorable. An example would be to counteract toxic side effects of chemotherapeutic agents on, for example, hematopoiesis and platelet formation, linings of the gastrointestinal tract, and hair follicles."

See, specification, p. 59, lines 7-10. The specification (pp. 57-59) details stimulation of epithelial cells (including keratinocytes and fibroblasts), glial cells, and cells found in the lining of the gastrointestinal tract. *See, e.g.*, p. 58, lines 1-14; p. 59, lines 7 – 12. Such stimulation can be used to heal wounds and ulcers. *See, e.g.*, p. 58, lines 11-13. The fact that multiple utilities

are recited in the specification does not mean that there is a lack of a specific, substantial and credible utility. As the MPEP makes clear, "[i]t is common and sensible for an applicant to identify several specific utilities for an invention." See MPEP § 2107.01. The case law is also clear. In re Gottlieb 328 F.2d 1016 (CCPA), is particularly relevant. In Gottlieb, multiple utilities were disclosed. The Court held that one specific utility was sufficient to meet the utility requirement (328 F.2d at 1018). That is all that is required here also. See also In re Brana 51 F.3d 1560 (Fed.Cir. 1995). Applicants once again repeat that this is a substantial, credible and specific utility.

Despite admitting to this disclosure, the Examiner then states that the skilled artisan would need to carry out further research on the claimed invention to determine for which of the possible asserted uses the claimed invention could be used. See Office Action pp. 4-5. No experimentation is necessary. Sufficient description is already provided for a person skilled in the art. First, a skilled artisan is told that FGF-CX is a growth factor, and that FGF-CX may be used to stimulate cell growth, *e.g.*, of the cells of the gastrointestinal ("GI") tract. See above. Second, the skilled artisan is given corroborative proof that FGF-CX can and does stimulate GI cell proliferation. See Jeffers *et al.* and Press Release from March 17, 2003, Response. A skilled artisan can make no other valid conclusion except that FGF-CX can and does substantially and specifically stimulate epithelial cells, including at least those of the GI tract.

In Brana, the Court stated that a declaration can be used to substantiate the asserted utility since the declaration pertains to a statement already in the specification. Ibid. The Declaration of William LaRochelle provided in the Response filed June 28, 2002, should have been dispositive of the utility requirement under 35 USC §101. The LaRochelle Declaration merely substantiates statements and assertions already in the specification as filed, namely that the claimed invention stimulates cell growth, including growth of epithelial cells (*e.g.*, fibroblasts and keratinocytes). *See* specification, p. 58, lines 11-13. *See* also MPEP 2107 (II)(B)(1)(ii). Jeffers *et al.* and the Press Release further substantiate the specification, and should also be held fully persuasive under Brana.

Second, the claims being prosecuted are to FGF-CX compositions. They are not to methods of treating the GI tract. That is but one of the listed utilities of the claimed invention. As stated in Gottlieb, one specific utility is sufficient to meet the utility requirement. *See*, 328

F.2d at 1018. The GI tract has epithelial cells, but so does any other tissue in the body that contains fibroblast. *See, e.g.*, specification, p. 6, lines 3-7. Applicants have provided the Examiner with the Jeffers *et al.* reference and the Press Release in the Response filed March 17, 2003, and the LaRochelle Declaration in the Response filed June 28, 2002. Any one of these supports the multiple credible, substantial and specific uses already disclosed in the specification. We state once again that the proper standard of review under Gottlieb is that one and only one disclosed utility is needed to meet the requirements of 35 U.S.C. §§101, 112. *See*, 328 F.2d at 1018. Applicants have submitted unequivocal evidence of record that confirms that the FGF-CX proteins encoded by the claimed nucleic acids have these activities at the very least.

Third, Applicants again note that utility is properly supported by the structural similarity of this FGF-CX with other known members of the FGF family and specifically contains a conserved family domain and hydrophobic transport domain. In addition, the FGF-CX encoded by the nucleic acids claimed here has a biological activity similar to a structurally related fibroblast growth factor-9 (FGF-9) compound already known and tested in the art for activation and/or proliferation of glial cells and fibroblasts (which are epithelial cells). *See*, specification at least at, *e.g.*, pp. 57-58 & FIG. 9. Other known FGFs have been demonstrated to be useful in the stimulation of wound healing; see, *e.g.*, U.S. Patent No. 5,804,213. One skilled in the art would find it credible that Applicants' disclosed fibroblast growth factor substantially and specifically affects the growth of fibroblasts. Applicants' disclosures in Jeffers *et al.*, the Press Release, and the LaRochelle Declaration further support these statements.

In addition, case law holds as valid a utility for claimed compounds based on structural features under facts similar to those in the instant application, *e.g.*, where the Court found utility for claimed compounds having close structural relationship to other compounds known to be useful in cancer therapy in In re Jolles, 628 F.2d 1322 (CCPA 1980); or stated that although it may be true that minor changes in chemical compounds can radically alter their effects, evidence of success in structurally similar compounds is relevant in determining whether one skilled in the art would believe an asserted utility in In re Brana 51 F.3d 1560 (Fed. Cir. 1995). Thus, the Examiner must hold this evidence as legally persuasive. There are multiple utilities for the composition of matter being claimed in the application, and they are fully supported and

consistent with generally accepted scientific principles as well as in accordance with current case law.

The Examiner reiterates the "how to use" utility-based § 112, first paragraph, rejection, but did not provide any legally proper reasons for doing so. As stated in the March 17, 2002, Response, for an Examiner to uphold a utility-based § 112, first paragraph, rejection, a case must represent one of those rare instances that meets the stringent criterion of being "totally incapable of achieving a useful result." Brooktree Corp. v. Advanced Micro Devices, Inc., 977 F.2d 1555 (Fed. Cir. 1992), as discussed in the Legal Analysis accompanying the Utility Guidelines (M.P.E.P. § 2107). The only instances in which the Federal courts have found a lack of patentable utility were where, "based upon the factual record of the case, it was clear that the invention *could and did not work* as the inventor claimed it did." M.P.E.P. § 2107 (emphasis added). These rare cases have been ones in which the applicant either (a) failed to disclose any utility for the invention, or (b) asserted a utility that could be true only "if it violated a scientific principle, such as the second law of thermodynamics, or a law of nature, or was wholly inconsistent with contemporary knowledge in the art." M.P.E.P. § 2107.01. That is simply not the case here, because (a) Applicants disclose the use of the invention as a growth factor, *e.g.*, at least on cells of the GI tract; and (b) the utilities provided in the specification do not violate scientific principle. In fact, they are upheld in the Jeffers paper, the Press Release on the FDA's approval of the IND, and the LaRochelle Declaration.

The rejection should be withdrawn.

35 U.S.C. § 112, first paragraph, rejection is overcome.

Claims 14 and 29 were rejected for enablement, but reasons for the rejection were only given for claim 14, and not claim 29. The grounds for the rejection of claim 14 is that the instant specification fails to teach how to make a polypeptide using the complementary nucleic acid molecule provided in claim 1. These two claims, as well as claim 1, now recite that the coding strand encodes the FGF-CX polypeptide of SEQ ID NO:2, and not its complement. The coding strand, and not the complement, has the codon sequence that corresponds to the FGF-CX protein, so this is fully supported by the specification. Upon entry of the amendments, these rejections are overcome.

The 35 U.S.C. § 112, Second Paragraph Rejections Are Overcome.

Claims 1, 3-4, 19-21 and 28 were rejected as being indefinite for various reasons. Applicants believe these rejections are moot in view of the amendments to the claims made herein.

Claim 1 was rejected because it recites "encoding a polypeptide comprising a sequence of SEQ ID NO:2." Applicants have amended claim 1 as suggested by the Examiner so it now recites "the amino acid sequence of SEQ ID NO:2."

Claim 2 was rejected because it recites "encodes a polypeptide of SEQ ID NO:2." Applicants have amended claim 2 as suggested by the Examiner so it now recites "encodes the polypeptide of SEQ ID NO:2."

Claims 4 and 28 were rejected for reciting "hybridization ... under stringent conditions." Both claims have been amended as suggested by the Examiner to recite that the stringent hybridization conditions as provided in the specification include a wash step.

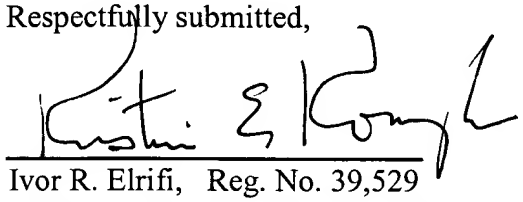
Upon entry of the amendments, these rejections are moot.

CONCLUSION

Applicants submit that the application is in condition for allowance, and such action is respectfully requested. Should any questions or issues arise concerning the application, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

A petition for a three month extension of time and fee are filed herewith. No additional fee is believed due at this time. However, the Commissioner is hereby authorized to charge payment of any additional fees required in connection with the papers transmitted herewith, or credit any overpayment of same, to Deposit Account No. 50-0311 (Reference No. 15966-557).

Respectfully submitted,



Dated: December 2, 2003

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